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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/684,001

10/10/2003

Stephen Gold

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EXAMINER

CAMPOS, YAIMA

ART UNIT

PAPER NUMBER

2185

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/08/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/684,001

Applicant(s)

GOLD ET AL.

Examiner

Yaima Campos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-25 is/are rejected.
- 7) ☒ Claim(s) 11-13 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/10/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. The instant application having Application No. 10/648,001 has a total of 26 claims pending in the application; there are 3 independent claims and 23 dependent claims, all of which are ready for examination by the examiner.

#### **I. INFORMATION CONCERNING OATH/DECLARATION**

##### **Oath/Declaration**

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

#### **II. INFORMATION CONCERNING DRAWINGS**

##### **Drawings**

3. The applicant's drawings submitted are acceptable for examination purposes.

#### **III. ACKNOWLEDGEMENT OF REFERENCES CITED BY APPLICANT**

4. As required by M.P.E.P. 609(C), the applicant's submissions of the Information Disclosure Statement dated October 10, 2003 is acknowledged by the examiner and the cited references have been considered in the examination of the claims now pending. As required by M.P.E.P 609 C(2), a copy of the PTOL-1449 initialed and dated by the examiner is attached to the instant office action.

#### IV. OBJECTIONS TO THE SPECIFICATION

##### *Claim Objections*

5. Claims 12 and 13 are objected to because of the following informalities:
6. Claims 12 and 13 refer to the limitation "media pool used by future executions" (claim 12, lines 4-5; claim 13, line 4). It is believed that this limitation should read – **media pool to be used by future executions-** and has been treated as such for the rest of this office action.
7. Appropriate correction is required.

#### V. REJECTIONS NOT BASED ON PRIOR ART

##### *Claim Rejections - 35 USC § 112*

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
9. Claims 23-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. Claim 8 recites the limitation "the order used under the second scheme " in line 2. There is insufficient antecedent basis for this limitation in the claim. The applicants might consider amending this claim to read –**an order used under the second scheme--**.
11. Any claim not specifically addressed above, is being rejected as encompassing the deficiencies of a claim upon which it depends.

## **VI. REJECTIONS BASED ON PRIOR ART**

### **Claim Rejections - 35 USC § 103**

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1, 3-8, 10, 14-19 and 21-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. (US 2004/0044862) in view of Mohan et al. (US 6,154,817).

14. As per **claims 1, 17 and 23**, Carlson discloses a method/system/machine readable medium having stored thereon sequences of instructions comprising:

obtaining backup job information from one or more backup applications for a plurality of backup jobs; **[With respect to this limitation, Carlson discloses “one pool may be for data that has been modified or accessed recently and another pool may be used for archived or backup data” (Page 2, Par. 0024)]**

calculating a required number of scratch media needed for one or more future executions of at least one of the backup jobs using the backup job information; and presenting the required number of scratch media to a user **[Carlson discloses “in certain**

**implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool” (Page 3, Par.**

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0044) wherein **“figure 10 illustrates logic implemented in the tape controller 10 to move a number of empty physical volumes from the source to the target pool... the tape controller 10 sets (at block 452) a count variable to the administrator specified number of physical volumes to move entered in field 402 of the GUI panel 400”** (Page 5, Par. 0060)].

Carlson does not explicitly disclose the details of a plurality of backup jobs.

Mohan explicitly discloses the details of a plurality of backup jobs as [**“job database” having “backup jobs”** (Col. 6, lines 23-51; Figures 2D, 2E and related text) wherein jobs are placed in **“job queue 240”** (Col. 8, lines 25-48; Figure 5 and related text)].

Carlson et al. (US 2004/0044862) and Mohan et al. (US 6,154,817) are analogous art because they are from the same field of endeavor of computer memory access and control.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the storage pool management method/system in which backup is performed as disclosed by Carlson and further explicitly provide details of a plurality of backup jobs as disclosed by Mohan.

The motivation for doing so would have been because Mohan discloses explicitly provide details of a plurality of backup jobs is done in [**“an improved system which automates the organization and handling of backup media, and in particular, tapes”** (Col. 2, lines 16-17)]

Therefore, it would have been obvious to combine Mohan et al. (US 6,154,817) with Carlson et al. (US 2004/0044862) for the benefit of creating a

method/system/machine readable medium having stored thereon sequences of instructions to obtain the invention as specified in claims 1, 17 and 23.

15. As per **claim 3**, the combination of Carlson and Mohan discloses the method of claim 1, wherein the backup job information comprises information for one or more backup devices, each backup device associated with at least one of the backup jobs **[Mohan discloses this limitation as “the media-id field 230C indicates the particular media 6a to which data was backed up for the session” (Col. 6, lines 53-54) and explains “storage rules which will be used to determine to which media 6a data will be backed up for the selected job” (Col. 8, lines 38-47)]**.

16. As per **claim 4**, the combination of Carlson and Mohan discloses the method of claim 3, wherein presenting the required number of scratch media comprises presenting the number of scratch media required for each of the backup devices **[Carlson discloses “in certain implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool” (Page 3, Par. 0044) wherein “figure 10 illustrates logic implemented in the tape controller 10 to move a number of empty physical volumes from the source to the target pool... the tape controller 10 sets (at block 452) a count variable to the administrator specified number of physical volumes to move entered in field 402 of the GUI panel 400” (Page 5, Par. 0060)]**.

17. As per **claim 5**, the combination of Carlson and Mohan discloses the method of claim 1, wherein the backup job information comprises information for one or more

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media pools, each media pool associated with at least one of the backup jobs [**Mohan discloses this limitation as “storage rules which will be used to determine to which media 6a data will be backed up for the selected job... the selectable storage rules include the name of the media pool 6 to which data will be backed up... a name of a media 6a in the pool 6 to which data will be backed up” (Col. 8, lines 37-48).**]

18. As per **claim 6**, the combination of Carlson and Mohan discloses the method of claim 5, wherein calculating comprises, for each media pool: determining an existing number of scratch media in the media pool; calculating the number of scratch media needed for the future executions using the media pool; and subtracting the existing number from the required number [**“a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool, or one pool needs fewer tape cartridges due to an anticipated decrease in data directed toward that pool” (Page 3, Par. 0044).**]

19. As per **claim 7**, the combination of Carlson and Mohan discloses the method of claim 6, wherein determining an existing number comprises determining if a protected period for one or more existing data media has expired [**Mohan discloses this limitation as “the selectable usage rules include the retention period and the minimum number of save set copies” (Col. 3, lines 51-59; Col. 4, lines 30-34).**]

20. As per **claims 8, 18-19 and 24-25**, the combination of Carlson and Mohan discloses the method of claim 5, wherein presenting the required number of scratch media comprises presenting the number of scratch media required for each of the media pools



**["in certain implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool" (Page 3, Par. 0044) wherein "figure 10 illustrates logic implemented in the tape controller 10 to move a number of empty physical volumes from the source to the target pool... the tape controller 10 sets (at block 452) a count variable to the administrator specified number of physical volumes to move entered in field 402 of the GUI panel 400" (Page 5, Par. 0060)].**

21. As per **claim 10**, the combination of Carlson and Mohan discloses the method of claim 5, further comprising presenting a report to the user identifying at least one media pool having a greater amount of scratch media than the required number of scratch media for the at least one media pool **[With respect to this limitation, Carlson discloses "one pool needs fewer tape cartridges due to an anticipated decrease in data directed toward that pool. Figs. 3, 7 and 9 illustrate different graphical user interface (GUI) panels presented by the tape controller 10 logic to enable the system administrator to transfer or move tape cartridges 6a, 6b... 6j (physical volumes) from one pool to another" (Page 3, Par. 0044)].**

22. As per **claim 14**, the combination of Carlson and Mohan discloses the method of claim 1, wherein calculating comprises calculating the number of scratch media required for the future executions of the backup jobs scheduled within a predetermined period of time **[Carlson discloses "in certain implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape**

cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool” (Page 3, Par. 0044). Furthermore, Mohan discloses “the user is asked to provide a date and time that the backup will run” (Col. 8, lines 49-50)].

23. As per claims 15 and 21, the combination of Carlson and Mohan discloses the method of claim 1, further comprising receiving from the user a list of one or more media to be used for at least a portion of the required scratch media [Mohan discloses “the process 700” for determining which media 6a in the scratch set 153 to use for the backup job starts at step 705. At step 710, a candidate list is created which will indicate records 224 of the potential media 6a (“candidates”) to which data can be backed up” (Col. 9, lines 53-57; Figure 7A and related text) wherein “the user is presented with a list of media 6a from the scratch set 153 (of a blank media) from which to choose” (Col. 10, lines 60-64)].

24. As per claims 16 and 22, the combination of Carlson and Mohan discloses the method of claim 15, further comprising for each media in the list, determining if the media is a valid scratch media [With respect to this limitation, Mohan discloses “media records are examined to determine if any media 6a exists” (Col. 9, line 60-Col. 10, line 59) and also explains “media-location-status field 224J indicates a status of the location of the particular media 6a in terms of its physical availability for use” (Col. 5, lines 27-29)].

25. Claims 2, 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. (US 2004/0044862) and Mohan et al. (US 6,154,817) as applied to

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claims 1, 3-8, 10, 14-19 and 21-25

above, and further in view of Blumenau (US 6,631,442).

26. As per claims 2, 9 and 20, Carlson discloses the method of claim 1, but does not disclose expressly “the backup job information comprises historical backup size information for at least one of the backup jobs.”

Blumenau discloses, “the backup job information comprises historical backup size information for at least one of the backup jobs” as [**“in step 351, the processing detects a requirement for one or more storage devices... alternatively, step 351 may be triggered by a trend analysis of data storage usage within the data storage system 100-1. In this case, trend analysis software in either one or more of the hosts 150 through 152 or in the data storage system 100-1 may determine patterns or periods of use requiring various amounts of actual data storage space to be available within a volume 110 through 112 during certain time periods. During peak usage periods, the trend analysis software may trigger the initiation steps 351 through 355 in order to add or remove actual data storage to and from the volumes 110 through 112”** (Col. 20, lines 1-36)].

Carlson et al. (US 2004/0044862), Mohan et al. (US 6,154,817) and Blumenau (US 6,631,442) are analogous art because they are from the same field of endeavor of computer memory access and control.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the storage pool management method/system in which backup is performed as disclosed by Carlson and further explicitly provide details of a plurality of backup jobs as disclosed by Mohan and further have the backup job information

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comprises historical backup size information for at least one of the backup jobs as taught by Blumenau.

The motivation for doing so would have been because Blumenau discloses that having the backup job information comprise historical backup size information for at least one of the backup jobs is done so that [**“as hosts access volumes of this invention, space can be dynamically added to the volumes on an as-needed basis”** (Col. 7, lines 17-41)].

Therefore, it would have been obvious to combine Blumenau (US 6,631,442) with Carlson et al. (US 2004/0044862) and Mohan et al. (US 6,154,817) for the benefit of creating a method to obtain the invention as specified in claims 2, 9 and 20.

## **VII. RELEVANT ART CITED BY THE EXAMINER**

27. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

28. The following reference teaches a storage system wherein a storage capacity pool is accessible through an interface.

US 6,810,462

29. The following reference teaches a method and system for rental storage which estimate future storage required (capacity/size) based on history of usage.

30. US 2002/0152181

**VIII. CLOSING COMMENTS**

**Conclusion**

**a. STATUS OF CLAIMS IN THE APPLICATION**

31. The following is a summary of the treatment and status of all claims in the application as recommended by M.P.E.P. 707.07(i):

**a(1) SUBJECT MATTER CONSIDERED ALLOWABLE**

32. Per the instant office action, claims 11-13 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

33. The primary reasons for allowance of claims 11-13 and 26 in the instant application is the combination with the inclusion in these claims of the limitation wherein calculating the required number of scratch media comprises for at least one of the future executions, dividing an average historical backup size of the backup job by an average capacity of a media type associated with the backup job.” The prior art of record including the disclosures under section VII above neither anticipates nor renders obvious the above recited combination.

**a(2) CLAIMS REJECTED IN THE APPLICATION**

34. Per the instant office action, claims 1-10 and 14-25 have received a first action on the merits and are subject of a first action non-final.

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**b. DIRECTION OF FUTURE CORRESPONDENCES**

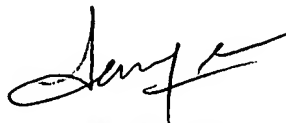
35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaima Campos whose telephone number is (571) 272-1232. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.

**IMPORTANT NOTE**

36. If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Sanjiv Shah, can be reached at the following telephone number: Area Code (571) 272-4098.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 15, 2006



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